2020

The Magic and Metaphysics of Shit :The Production of Space and Digital Technology

David Capener

Technological University Dublin, d17128776@mytudublin.ie

Follow this and additional works at: <https://arrow.tudublin.ie/gradcamart>

Part of the [Digital Humanities Commons](#), and the [Other Architecture Commons](#)

Recommended Citation

Capener, D. (2020) The Magic and Metaphysics of Shit :The Production of Space and Digital Technology, *Architecture and Culture Journal*, 2020. .doi:10.1080/20507828.2020.1792106

This Article is brought to you for free and open access by the Graduate School of Creative Arts and Media at ARROW@TU Dublin. It has been accepted for inclusion in Articles by an authorized administrator of ARROW@TU Dublin. For more information, please contact arrow.admin@tudublin.ie, aisling.coyne@tudublin.ie, gerard.connolly@tudublin.ie.

ARCHITECTURE AND CULTURE

David Capener

GRADCAM, Technological
University, Dublin, Ireland
Davidcapener@gmail.com

Keywords: Bernard Stiegler,
Henri Lefebvre,
space, technology

The Magic and Metaphysics of Shit: The Production of Space and Digital Technology David Capener

ABSTRACT Reading Henri Lefebvre alongside Bernard Stiegler this paper will explore the changes that have taken place to the production of space in our age of digital technology. Lefebvre sensed the radical changes taking place in society through the implementation of computational technologies. He asked a prescient question: How is this space being produced? Lefebvre was unable to foresee the significant changes to the actual *mechanics of the production of space* brought about by the third industrial revolution. A thinker who does do this is Bernard Stiegler who is interested in how new digital technologies change memory via tertiary mnemotechnical devices – memory storage devices that are external to the human body. Reading Lefebvre alongside Stiegler might seem unusual, however, I will demonstrate that implicit in Lefebvre's argument regarding the production of space is memory and implicit in Stiegler's argument regarding the exteriorization of memory in technics is space.

pp 1–17
DOI:10.1080/20507828.
2020.1792106

No potential conflict of
interest was reported
by the author.

© 2020 Informa UK Limited,
trading as Taylor & Francis
Group

Routledge
Taylor & Francis Group

“Alexa! Do You Love Me?”

In a suburban house in Belfast I am spoken to by a small gray puck shaped speaker. “Hall lights on ... do you need anything else.” The

Amazon Echo, an interface for an extraordinarily complex set of information processing layers. “Alexa, do x!” The discounted toilet-roll is ordered or the house lights come on, but before they do, traveling at the speed of light, a small packet of data arrives at a banal warehouse in the middle of somewhere where needs, wants and desires are farmed in a repository of disembodied voices. From the mining of tantalum, used in the manufacturing of the Echo, from the geological strata of the Democratic Republic of Congo where the profits helped fund the deadliest civil war since WWII; to cavernous, so-called “fulfilment centres” where an invisible workforce are called into action by our buy-now-1-click interface commands; moving robotically down seemingly endless aisles of algorithmically organized products arranged according to purchase preferences the like of which we never knew we had – someone who buys a Derrida book is likely to go on and buy cat food, a computer monitor, underwear, a hammer and a multi-pack of baked beans: a strange architecture of consumer desires – the production of abstract space (Figure 1). Products primed and ready to move across a more-than-military-grade infrastructure to arrive on our door mats as an innocent looking cardboard box

Oh to be an archeologist of the future unearthing the twenty-first centuries vast repository of disembodies voices: “Alexa! Do you love me?” “There are people I desire and things I can’t do without, but I am still trying to figure out human love.”

Those simple words “turn on ... lights,” “buy this-or-that,” are part of complex entangled infrastructural ecology; what Benjamin Bratton calls The Stack¹ – an accidental megastructure that is both a way of

COLOR
Online /
B&W in
Print

Figure 1
Interior of Google data
center © Google 2012.

understanding our age of computation and a machine by which spatial production takes place. A vertical geography moving from the raw resources of the earth to the light speed interactions of the cloud, drawing in users (human and non-human) and acting upon the terrains of our cities. Just as Marx understood the division of labor as intrinsically linked to the history of the means of production, so these new means of barely perceptible light-speed production and the strange architectures that facilitate them are radically deterritorializing and territorializing new urban terrains. The digital turn is inherently material; inherently spatial. It is an architectural problem.

How, as a profession, might we approach this problem? How might we understand the production of space in our age? Those questions form part of a set of questions asked fifty-years ago by, Henri Lefebvre: Who produces this space? What is it that is being produced? How is it being produced? Why is it being produced? For whom is it being produced? To what extent do these spaces contribute to our alienation from our ability to participate in what Lefebvre saw as our democratic right to the production of space. What, in his 1968 text, he called *The Right to the City*. There is not space here to adequately answer all of those questions. The question I will focus on in this essay is: How is space being produced? My focus will not be on the kinds of spatial typologies produced by digital technologies – the “what” of what is being produced – but will rather look at the actual changes to the “mechanics” of the production of space – the “how” of spatial production. This is important because for architects to adequately face the challenges posed by the complex and entangled ways in which digital technologies are being folded into the architecture’s of planetary urbanization, will require the creation of new concepts, that in a Deleuzian sense, do not remain abstract images of thought but are tools by which new material realities might be enabled – concepts in play. Put simply, what is of interest here is more process and less product.

At the time of writing *The Production of Space* Lefebvre sensed the radical changes taking place in society through the implementation of computational technologies and, although he was obviously unable to fully comprehend the changes that were taking place, he asked a prescient question, one as relevant today as it was then: “where, how, by whom, and to what purpose is information stored and processed? How is computer technology deployed and whom does it serve?”² While unable to answer these questions Lefebvre was well aware of how changes in the modes of production were creating new spatial manifestations in the city and beyond when he wrote that “the shift from one mode [of production] to another must entail the production of a new space.”³

Lefebvre was aware of this shift but he was unable to foresee how the epochal shift from one mode of production (the second industrial revolution) to another (the third industrial revolution of digital technology) would bring about significant changes to the *actual mechanics of the*

production of space. A thinker who does give detailed attention to this is Bernard Stiegler. In particular, Stiegler is interested in how new digital technologies change the perceptual, retentive and protentional function of memory via what he calls tertiary mnemotechnical devices – put simply, memory storage devices that are external to the human body.

At first glance reading Lefebvre alongside Stiegler might seem like an unusual coupling. However, I will demonstrate that implicit (but under explored) in Lefebvre's argument regarding the production of space is *perception* and implicit in Stiegler's argument regarding the exteriorization of memory in technics is *space*. I contend that a possible avenue to answering the question how space is produced in an age of digital technology will require the making explicit of that which is implicit in the work of both Lefebvre and Stiegler – for Lefebvre it is *perception* and for Stiegler it is *space*. I contend that by understanding that which is explicit in one thinker as implicit in the other and reading the seemingly unlikely coupling of Lefebvre and Stiegler through each other we can better understand how an epochal shift from one mode of production to another has radically altered how memory works, how space is perceived and ultimately what new kinds of space are being produced today. To answer these questions I will begin by sketching an overview of Lefebvre's *The Right to the City*. I will show that the right to the city is ultimately nothing less than a revolutionary conception of citizenship worked out through the democratic production of differential space. I will then introduce the work of Bernard Stiegler, in particular his understanding of how the function of memory is radically changed with the advent of digital technologies.

The Right to the City

The Right to the City, as Peter Marcuse says is “both an immediately understandable and intuitively compelling slogan and a theoretically complex and provocative formulation.”⁴ Its recent popularity has been helped by interpretations of those like David Harvey⁵ and its use by activist groups like the Right to the City Alliance. Yet, *The Right to the City* is, like many of Lefebvre's texts, elusive – it opens out a wide and long vista into his vast corpus of over sixty other texts. The following section will sketch a brief overview of *The Right to the City* which I contend is synonymous with the production of space.

“This work will take an offensive form (that some will perhaps find offending).”⁶ The opening words of *The Right to the City* are revealing. Here Lefebvre takes aim at what he sees as the “fashionable” structuralists. He doesn't mention him by name, but it was fellow Marxist Louis Althusser who represented what Lefebvre saw as the errors of structuralism; breaking with the continuity of a historical Marx. The structuralists, he writes, “close off reflections” and “block off [the] horizon.”⁷ The horizon for Lefebvre cannot be defined “as an accomplished reality ... but, on the contrary, as ... an illuminating virtuality. It is the possible, defined by a direction, that moves

toward [urban society] as the culmination of its journey.”⁸ The purpose of the right to the city is to “break up systems” and to “open up through thought and action towards possibilities by showing the horizon and the road.”⁹ Urbanism too has become a system, its proponents – architects, planners, policymakers – publicly promoting both an “ideology and practice”¹⁰ that according to Lefebvre has failed to comprehend the political implications, while at the same time wanting to allow their problems “to enter into consciousness and political policies.”¹¹ The closing words of *The Right to the City* are also revealing: “Paris 1967 – centenary of Capital.”¹² That year Marx’s *Capital* was 100 years old and in honor of the anniversary, Lefebvre wrote, what in his words was a “cry and demand” for “nothing less than a revolutionary conception of citizenship.”¹³ The following year, inspired by Lefebvre, Paris would become the center of a global student uprising.

It is telling that Lefebvre – an important post-Marxist thinker, at a time of political uncertainty – would mark the centennial of *Capital* by proposing an urban, geospatial, materialization of Marx. As David Harvey remarks, “conventional Marxist thinking ... had never accorded the urban much significance in revolutionary strategy, even though it mythologized the Paris Commune as a central event in its history.”¹⁴ *The Right to the City* is Lefebvre taking Marx at his word that “the world’s becoming philosophical is at the same time philosophy’s becoming worldly, that its realization is at the same time its loss.”¹⁵ For Lefebvre the right to the city is nothing less than a revolutionary conception of citizenship performed through the production of heterogeneous differential spaces that rupture the spatial coding of the homogenous abstract spaces of capital – the right to the city is the production of space that counters abstract space.¹⁶ But what does Lefebvre mean by the production of space?

The Production of Space

“To speak of ‘producing space’ sounds bizarre, so great is the sway still held by the idea that empty space is prior to whatever ends up filling it.”¹⁷ It sounds bizarre because space, or indeed space as Lefebvre wishes to conceive it – as in, a material immanent reality that is *produced* – has throughout philosophical history, beginning with Plato, been reduced to “abstract (metaphysical) representations of space”¹⁸ culminating in the ghost that has haunted philosophical thought since the seventeenth century – Descartes’ “notion of space as absolute, infinite *res extensia*, a divine property which may be grasped in a single act of intuition because of its homogenous (isotropic) character.”¹⁹ For Lefebvre, philosophy has forgotten space. Excarinated to, at worst, the transcendent and at best the transcendental, philosophers have themselves brought about a schism annexing space to a Cartesian divine realm or an abstract Kantian a priori – this for Lefebvre is “the magic and metaphysics of shit.”²⁰ When considered in isolation detached from the

material reality of its production space becomes little more than an empty abstraction.²¹ In *The Production of Space*, Lefebvre seeks to bring a philosophy of space down to earth. So what does Lefebvre mean by space?

Space does not exist

Lefebvre's understanding of space is non-Euclidean: Space is not an object;²² it is in fact neither subject or object;²³ nor is it a container,²⁴ a homogenous abstract entity that can be measured, calculated and bounded. Space does not exist; it does not preexist that which populates it. *It is produced*: Social space is socially produced. It is therefore not universal; it can only be understood in the context of a specific setting. It is produced by that which populates it and is itself a means of production.²⁵ It is not a Newtonian absolute it is "rather a set of relations between things"²⁶ – "a set of relations and forms,"²⁷ that are simultaneously "result and cause, product and producer."²⁸ Space does not preexist that which populates it. It is a dynamic heterogeneous process of becoming – it is neither here nor there – it is always-already a relational process. How then is space produced?

The production of space is a complex process that via three dialectically interconnected processes oscillates between epistemological, phenomenological, materialist and, semiotic philosophical registers. To fully comprehend what it is Lefebvre means by the production of space one must first understand how it is that he moves away from the traditional Hegelian-Marxist understanding of the dialectic and introduces a three-dimensional dialectic.²⁹ While the Hegelian-Marxist dialectic begins with two contradictory terms that are modified through a third term, Lefebvre's triadic comprises three terms. "Each of these can be understood as a thesis and each one refers to the other two and would remain a mere abstraction without the others."³⁰ Unlike the Hegelian-Marxist dialectic Lefebvre's "triadic figure does not end in a synthesis ... It links three moments that are left distinct from each other, without reconciling them in a synthesis."³¹ Each term is of equal relational value; none holds more sway than another; none takes precedence.

The triadic

Lefebvre articulates his three-dimensional triadic in two different ways, the first based in his theory of language or semiotics and, the second phenomenological (Figure 2). Firstly, space is produced through the process' of "spatial practice," "representations of space," and, "spaces of representation." Secondly, space is produced through the process' of the "perceived," "conceived," and, "lived." Both of these triadics map onto the other and can be understood as follows:

Spatial practice/perceived space is the network of infrastructures produced by the current means of production such as roads, rail

COLOR
Online /
B&W in
Print

Figure 2
 Lefebvre's three
 dimensional triadic.

networks, data infrastructure, both local and global that form the spatial practice of everyday life and which, through our bodily senses, we perceive, which in turn informs how we “practice” everyday life. In terms of the purpose of this essay – exploring the means by which spaces are created by new digital technologies – a relevant example of spatial practice would be the key facilitative infrastructure of our digital age, data centers and the networks of high speed fiber optic cables that facilitate light speed communication. This very material example is closely connected to how we perceive space via the portable digital technologies that they facilitate. As I will explore further below the material realities of spatial practice, like facilitative data infrastructures – intrinsically linked to modes of production – are changing our ability to remember, perceive and imagine. Representations of space/conceived space is conceptualized space, the space of scientists, planners,

urbanists, smart city ideologists, architects and the so-called experts who produce certain cartographic representations of space, through drawings, images, and visualizations. Representational space/lived space is the space that we passively experience as we go about our lives through symbolic representations and how space is mediated to us as an act of perception and imagination through signifying processes of non-verbal symbols and sign.

Each of the three dimensions of the production of space are understood by Lefebvre as being nonhierarchical. Each process is of equal value, “[n]one of these dimensions can be posited as the absolute origin, as ‘thesis,’ and none is privileged. Space is unfinished, since it is continuously produced ...”³² This means that Lefebvre’s dialectical triadic is unstable. It is intentionally unstable. If it were not, it would defeat its purpose. It would become a version of the very thing it seeks to critique: static, bounded, measurable, abstract, transcendent philosophies of space. It is this instability – the always-already calling itself into question – that means the triadic remains a useful framework for understanding the constantly changing production of space.

Thus far I have introduced Lefebvre’s concept of the right the city as a revolutionary conception of citizenship that is worked out through the democratic production of space. I have introduced the production of space as a nonhierarchical, heterogeneous process that is unstable, always calling itself into question. In the final section of this essay I will focus on one specific and under-explored process in Lefebvre’s triadic: *perception*. As I have already mentioned, to be true to the triadic we must not preference one process over another, however, by bringing Stiegler’s work on memory into conversation with Lefebvre’s triadic, specifically perceived space, I will show that the phenomenological undercurrent in the triadic – one that Lefebvre himself was cautious of – is useful for understanding the production of space in an age of digital technology.

Perceived space

How the subject perceives space is of central importance for Lefebvre. “How does one perceive a picture, a landscape or a monument?”³³ he asks in *The Production of Space*. “Perception naturally depends on the ‘subject’: a peasant does not perceive ‘his’ landscape in the same way as a town-dweller strolling through it.”³⁴ However, Lefebvre is skeptical of phenomenology – too abstract for his materialist sensibility, too Cartesian in its separation of subject and object. This is why in the triadic the concept of perceived space is categorically the same as spatial practice and the concept of “the lived cannot be understood historically without the conceived.”³⁵ This is of significance in thinking Lefebvre alongside Stiegler. The separation of the lived and conceived (and indeed spatial material practice from perception) is pervasive throughout western philosophy – the separation between *living* and *thinking*. This could be articulated slightly differently using the central concern of Stiegler’s

philosophy as the separation between *tékhnē* and *epistēmē* in short the difference between material and knowledge.³⁶

That Lefebvre links the phenomenological undercurrent in his triadic to the material is of great importance. Perception cannot be thought of outside of the material reality it seeks to perceive and material reality (space) cannot be thought without recourse to perception. As spatial practice and perceived space are dialectically related terms there is a mutually constitutive relationship between them. “Lefebvre’s aim is, so to speak, a materialist version of phenomenology.”³⁷ The dialectical connection between spatial practice and perception and lived space and conception means that there is a built in openness within the triadic which is constantly calling each term into question. It is the latent instability of the triadic that means it can never be used as a static, universal doctrinal framework for the analysis of spatial production. To think space is to think the processes of becoming that *are* the production of space.

The connection between lived space and perceived space also serves as an important reminder of Lefebvre’s central thesis in *The Production of Space*: as the modes of production change so to the spaces that are produced also change. Put another way: technology produces space. As technology changes so too perception changes and, according to Lefebvre’s triadic as perception changes new spaces are produced. Thus, the epochal shift to the third industrial (digital) revolution is not simply a historical event, it is a philosophical event that has created a phenomenological revolution.³⁸ It is a phenomenological revolution because *technology structures perception*. Technology makes our perception of the world possible. Technology is and has been our only way of accessing a world of phenomenon. Not only is it a way of accessing the world – a lens through which a priori phenomenon is mediated to us – accessing a world of phenomenon but rather technology itself *generates phenomenality*; it is productive: *Technology produces space*. “The digital revolution is therefore not just a historical event in the history of technology; it is a philosophical event that affects our phenomenological experience of the world.”³⁹ This is nothing new. The world has always been technologically mediated. Wolfgang Schivelbusch, in his fascinating book, *The Railway Journey: Trains and Travel in the Nineteenth Century* (2014), shows how perception, was radically transformed by technologies of industrialization, in particular, the rail network. He writes that “the space between points,” what he calls traditional travel space, is destroyed, as localities, previously inaccessible or accessible only by means of cart and horse collide and “move into each other’s vicinity,” losing “their old sense of local identity, which used to be determined by the spaces between them. The isolation of localities, which was created by spatial distance, was the very essence of their identity, their self-assured and complacent individuality.”⁴⁰ This spatial collision radically changed the subject’s perception of space, time, speed, geographies and

the other. Technology structures perception and produces new kinds of space. As such, I propose that the work of Bernard Stiegler is a productive way of rethinking Lefebvre's triadic for our digital age.

Stiegler, Space and Memory

Bernard Stiegler's work on memory is a productive way to think the production of space anew for our age of digital technology. There is not space here to introduce the vast corpus of Stiegler's thought. For a useful introduction see *Philosophizing by Accident* (2004).⁴¹ While this may seem like an odd coupling I contend that implicit in Stiegler's work is space. The journey from volume one to three of *Technics and Time* is one of the spacialization of technics, or more accurately the technicisation of spatial production, or even more accurately the co-originary status of space and technics. If following Stiegler we understand time as produced through concrete processes of temporization and if time is the perception of temporality as mediated by technics and new digital technologies are able to change how temporality is mediated and perceived then our understanding and experience of the perception of time is called into question. If, following Stiegler, space-time is produced through concrete processes of temporization and if new digital technologies change the perception of temporality and along with Lefebvre we understand perception as a key process of spatial production then the process of spatial production is radically altered by digital technologies. In short: Technics produces space and space produces technics. But how do digital technologies produce space? How is spatial production radically altered? Or, more specifically: How, beyond simply reverting to discussions about spatial typologies, might we understand the actual changes that have taken place to the mechanics of the production of space in our age of digital technology?

In volume one *The Fault of Epimetheus*, Stiegler introduces a foundational concept – the co-originary status of humanity and technology. The human does not just invent technology but the human is itself an invention of technology – “the invention of the human is technics;”⁴² “technics is the condition of culture.”⁴³ As Stiegler puts it: “The evolution of the ‘prosthesis’, not itself living, by which the human is nonetheless defined as a living being, constitutes the reality of the human's evolution, as if, with it, the history of life were to continue by means other than life.”⁴⁴ This has been forgotten by western philosophy; a schism has been crested between *tékhnē* and *epistēmē*; over the three volumes of *Technics and Time* Stiegler will bridge this chasm. Between volumes two and three Stiegler, using Husserl, introduces his concept of tertiary retention – memory devices that are external to the human body. This third memory is both supported and constituted by technological supports.⁴⁵ This is an ancient process, beginning with the ability of prehistoric beings to sharpen flint, which for the first time in the history

of life meant that the possibility now existed to “transmit knowledge’s that were individually acquired, but by way that is not biological.”⁴⁶

Man is a cultural being to the extent that he is also essentially a technical being: it is because he is surrounded by this tertiary technical memory that he can accumulate the intergenerational experience that is often called culture – that is why it is absurd to oppose technics to culture. Technics is the condition of culture in as much as it permits transmission.⁴⁷

This process continues today via digital tertiary retention devices: the calendar on my iPhone is a form of retention; as is a Facebook timeline, a Twitter feed or hyper-scale data centers that have become vast memory storage repositories.

Stiegler calls this human-technical being “organized inorganic beings” which he says are, in a strict phenomenological sense: “constitutive of ... spatiality.”⁴⁸ Human memory is not passed down from generation to generation genetically, it is passed down by those memories being externalized, outside of the human body, like a sharpened flint, a stone tablet, a book, a text message or a tweet – or in Lefebvrian terms spatial practices which, like Stiegler, as I have shown above, he sees as inseparable from perception. Put simply, there is an implicit spatiality in the work of Stiegler: the co-originary status of the human through the exteriorization of memory via technical artifacts produces space – “tertiary retention is ... spatial.”⁴⁹ To understand why this is important for the production of space in an age of digital technology I will now introduce in more detail Stiegler’s concept of tertiary retention and show how the material spatial exteriorization of digital memory devices changes perception and thus can be mapped onto Lefebvre’s triadic.

Tertiary retention

Stiegler’s concept of tertiary retention is based on Edmund Husserl’s work on retention which comprises of two parts: primary and secondary retention. Using the example of listening to a melody, primary retention can be understood as the perception of what is happening immediately around us. To make sense of a melody I must be able to retain and remember the note that I am immediately hearing as well as the note that precedes it. Secondary retention is the recalling of past memory. For example, the memory of a melody that I heard yesterday.⁵⁰ However, something different happens when the melody is recorded and I listen to it on a record player rather than hearing it performed live – this Stiegler calls tertiary retention. Tertiary retention is, as I introduced above, a third kind of memory that is exterior to the human body – like a picture or a photograph that aids the recall of a specific memory. Husserl calls this kind of memory “image consciousness” but this is very different from what Stiegler means by tertiary retention. For Husserl primary retention is different from secondary

and tertiary retention. This is because primary retention is the means by which we directly perceive the world. Secondary retention is different because rather than being an act of perception they are an act of imagination – secondary and tertiary retention *come from* primary retention. Stiegler's account differs from that of Husserl's, rather than primary retention being constitutive of secondary retention it is tertiary retention that is constitutive of primary retention – technology structures perception. Using the example of listening to a prerecorded melody Stiegler writes.

You only have to listen twice to the same melody to see that between the two auditions, consciousness (the ear, here) never hears the same thing: something has occurred. Each new audition affords a new phenomenon, richer if the music is good, less so if not, and that is why the music lover is an aficionado of repeated auditions – a variation of selections ... From one audition to the next the ear is not the same, precisely because the ear of the second audition has been affected by the first.⁵¹

In short, the perception of the melody, in the moment, as it is being heard is made different by tertiary memory. This becomes even more significant when we consider the forms of tertiary retention made possible by new digital technologies, the speed at which they operate and the access that we, often inadvertently, allow them to have.

That tertiary retention is spatial is of great significance for, according to Stiegler, it “opens it to every possible manipulation.”⁵² This is possible because of the speed at which digital tertiary retention devices operate, the access they have to our immediate experiences of space and time and, their ability to record and “remember” events in real-time radically changing the process of retention. A short-circuiting takes place. The selection process operating between secondary retentions (past memory) and tertiary retentions (exteriorized memory) is short-circuited: “these ... moments coincide in a single spatiotemporal reality such that all delay, all distance, between them is eliminated.”⁵³ Unlike listening to a record on the tertiary memory device of a turntable digital technologies operate on a global collective scale with the ability to create and reproduce information in real-time at light-speed or what Stiegler calls light-time. “Spatiotemporal distance between those recalling and what is recalled is collapsed, and a memory is iteratively reterritorialised in the moments of its recollection, over-determining it with the metadata of capture, storage and retrieval.” This has implications for the phenomenology of perceived space whereby “experience is ... over-coded with chrono-referential and geo-referential data, specified by technical infrastructures,” as such new layers of meaning (or in Lefebvrian terms, representations) are applied to space.⁵⁴ Digital tertiary retention of this

kind of scale is a global spacialization of memory that allows for what Stiegler calls “a quasi-materialization of ... consciousness.”⁵⁵

Google Maps and the Production of Space

In the final section of this essay I want to help ground some of these ideas by using the example of a familiar piece of digital technology, the Google Maps smartphone application. While this is a simple example that runs the risk of reductionism by over simplifying the ideas presented above, it is my hope that it will, for the reader, in part, help ground some of the more complex theoretical ideas in a material everyday reality. The example begins on Royal Avenue in Belfast. I open Google Maps on my phone – a representation of space is presented to me. I assume, because I am conditioned to think so, that the map which I see on my screen is an accurate representation of my surroundings. However, something much more nuanced, at the level of perception is taking place. As Adam Greenfield writes, when we open something like a digital mapping application “our sense of the world is subtly conditioned by information that is presented to us for interested reasons, and yet does not disclose that interest.”⁵⁶ The information that I see on my screen – the representation of space – may be different from information that you see on your screen because (depending on various privacy settings) that information has gone through a process of algorithmic sorting based on my web search history, other apps I have installed, things that I have said, where I have visited before etc. Our perception of space is being mediated in different ways. While this may appear to be of little consequence it has a tangible effect on the spaces produced by my daily routines or as Lefebvre would call them, lived spaces or perceived spaces, because “according to Google, four out of every five consumers use the map application to make local searches” half of those end up “visiting a store within twenty-four hours, and one out of every five of these searches results in a ‘conversion’, or sale.”⁵⁷

So, lets imagine that, based on the representation of the map that I have on my screen I pick a coffee shop, find some “representational” images of that coffee shop, read some representational reviews on Trip Advisor that change my perceptions of the space and visit the coffee shop (lived space) where via social media platforms, like Instagram or Facebook, I might contribute to the production of additional representational spaces by posting careful cropped and filtered images of my skinny latte, or a review geotagged marking my location, that immediately connects me into a global cognitive assemblage of dopamine firing “like” clicks and perhaps more importantly to a digital tertiary retention creating the possibility that my memory and perception of the spaces that I experience may be diminished thus changing how I might re-represent those spaces at a later date. These *representational spaces* that I create, and the lived, perceived spaces that I inhabit then become important data when it

comes to the neurological, chemical and physical remapping of me the user who is re-represented new spatial configurations via digital mapping devices that in-turn change the “lived” spaces that I might inhabit, the way that I perceive those spaces and the way I go on to represent those spaces. All of which is based on the increasingly quickened hyper-speed algorithmic processing of an imagined future configured by the past which dictates my actions in a material present – meaning that the digital production of space has become a closed-loop of increased alienation selling me the myth that my portable digital prosthesis is opening the world out to me when in fact it is closing it in.

This kind of hyper-speed, barely imperceptible production of digital space “is an encounter with layers of visible and invisible interfaces” that not only map the world but map us, “rendering the world as an image map and image instrument for [our] particular idealised conception of it.” We are thus governed by a “highly striated weave of dense differential connections in specific networks.” This kind of urban realm “is not managed from some central command position,” like the techno-supremacist ideology of smart city exponents like IBM or Cisco would have you believe. Rather the digital turn of the spatial has resulted in a “dispersal of authority into hypergranular interfacial fields” where each individual or “dividual” is cast as a sort of cellular automaton, expressing absolutely specific intentions and instructions for an emerging territory in formation. That territory in turn is driven from the bottom up according to the limited frames of thought, action, access, and expression that its own aggregate field of interfaces presents to each user.”⁵⁸

The example I have offered is a simple one but is perhaps one that is representative of how everyday spatial production is changing in our age of total planetary computation. What is happening here is not inconsequential; computation is not virtual; it is a deeply physical event. The lived spaces that we inhabit are being represented to us in a particular way for a particular purpose for a particular outcome that then in-turn go to dictate how space might be represented to us in the future, how we might use those spaces and how we perceive those spaces. The digital turn is inherently material; inherently spatial. It is an architectural problem.

In conclusion – which I hope, that for some, will be more like a beginning for further consideration regarding the production of space in an age of digital technology – I will now return to the question I posed at the beginning of this essay: How is space produced? Or, more specifically, how are digital technologies changing the mechanics of the production of space? I have shown that the right to the city worked out through the production of space is a complex heterogeneous flow of processes that are simultaneously phenomenological and semiotic while remaining immanently material. The under explored phenomenological thread that weaves its way across Lefebvre’s triadic is a productive way of exploring the question of spatial production in an age of digital technology. When

thought alongside Bernard Stiegler's work on tertiary retention we are able to understand how the epochal shift in the means of production from analogue to digital radically alters the mechanics of the production of space and consequently the kinds of spaces that are produced. This essay has only begun to scratch the surface of the changes that are taking place in the production of space, more work is needed to investigate the effect that digital tertiary retention devices are having not just on how we perceive space but how we conceive space (protention) and the lived networks and infrastructures that are being produced in space.

David Capener

Notes

1. Benjamin H. Bratton, *The Stack* (Massachusetts: MIT, 2005).
2. Henri Lefebvre, *The Production of Space* (Malden, MA: Blackwell, 2016), 86.
3. Ibid., 46.
4. Peter Marcuse, "From Critical Urban Theory to the Right to the City," *City* 13, no. 2–3 (2009): 185–197.
5. See David Harvey, "The Right To The City," *New Left Review* 53 (2008) and Right to the City Alliance, accessed May 7th, 2018. <https://righttothecity.org/>.
6. Henri Lefebvre, Eleonore Kofman, and Elizabeth Lebas, *Writings On Cities* (Oxford: Blackwell, 2008), 63.
7. Ibid.
8. Henri Lefebvre, *The Urban Revolution* (Minneapolis: University of Minnesota Press, 2003), 16–17.
9. Lefebvre, Kofman, and Lebas, *Writings On Cities*, 63.
10. Lefebvre, Kofman, and Lebas, *The Urban Revolution*, 16–17.
11. Lefebvre, *Writings On Cities*, 2.
12. Ibid., 181.
13. Ibid., 158.
14. David Harvey, *Rebel Cities* (London: Verso, 2013), xiii.
15. Karl Marx, *Writings of the Young Marx on Philosophy and Society*, ed. Lloyd D. Easton and Kurt H. Guddat (New York: Doubleday, 1967), 62.
16. Henri Lefebvre, "Dissolving City, Planetary Metamorphosis," *Environment and Planning D: Society And Space* 32, no. 2 (2014): 203–205.
17. Henri Lefebvre, *The Production of Space* (Malden, MA: Blackwell, 2016), 15.
18. Ibid., 14.
19. Ibid.
20. Henri Lefebvre, *L'existentialisme* (Paris: Anthropos, 2001), 63.
21. Lefebvre, *The Production of Space*, 12.
22. Ibid., 73.
23. Ibid., 92.
24. Ibid., 94.
25. Ibid., 84.
26. Ibid., 83.
27. Ibid., 116.
28. Ibid., 142.
29. Christian Schmid, "Henri Lefebvre's Theory of the Production of Space," in *Space, Difference, Everyday Life: Reading Henri Lefebvre*, ed. Kanishka Goonewardena, Stefan Kipfer, Richard Milgram and Christian Schmid (New York: Routledge, 2008), 41–59.
30. Ibid., 33.
31. Ibid.
32. Ibid., 43.
33. Lefebvre, *The Production of Space*, 113.
34. Ibid., 113–114.
35. Ibid., 38.
36. Bernard Stiegler, *Technics and Time: 1. The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford: Stanford University Press, 1998), 1–18.
37. Schmid, "Henri Lefebvre's Theory of the Production of Space," 39.
38. Stephane Vial, *Being and the Screen, How the Digital Changes Perception* (Massachusetts: MIT, 2019).

39. Ibid., 42.
40. Wolfgang Schivelbusch, *The Railway Journey: Trains and Travel in the Nineteenth Century* (California: University of California Press, 2014), 45.
41. During, Stiegler, and Benoît Dillet, *Philosophising By Accident* (Edinburgh: Edinburgh University Press, 2017).
42. Stiegler, *Technics and Time: 1. The Fault of Epimetheus*, 137.
43. During, Stiegler, and Dillet, *Philosophising By Accident*, 59.
44. Stiegler, *Technics and Time: 1. The Fault of Epimetheus*, 50.
45. During, Stiegler, and Dillet, *Philosophising By Accident*, 51.
46. Ibid.
47. Ibid., 59.
48. Stiegler, *Technics and Time: 1. The Fault of Epimetheus*, 17.
49. Bernard Stiegler, *Technics and Time: 3. Cinematic Time and the Question of*
- Malaise*, trans. Stephen Barker (Stanford: Stanford University Press, 2011), 73.
50. Ibid., 37.
51. Ibid.
52. Ibid., 73.
53. Bernard Stiegler, *Technics and Time: 2. Disorientation*, trans. Stephen Barker (Stanford: Stanford University Press, 2009), 116.
54. Samuel Kinsley, "Memory Programmes: The Industrial Retention of Collective Life," *Cultural Geographies* 22, no. 1 (2014): 155–175.
55. Stiegler, *Technics and Time: 3. Cinematic Time and the Question of Malaise*, 73.
56. Adam Greenfield, *Radical Technologies* (London: Verso, 2017), 63.
57. Ibid.
58. Bratton, *The Stack*, 158.

References

- Bratton, Benjamin H. 2005. *The Stack*. Massachusetts: MIT.
- During, Elie, Bernard Stiegler, and Benoît Dillet. 2017. *Philosophizing by Accident*. Edinburgh: Edinburgh University Press.
- Greenfield, Adam. 2017. *Radical Technologies*. London: Verso.
- Harvey, David. 2008. "The Right To The City," *New Left Review* 53. <https://rightto-thecity.org/>
- Harvey, David. 2013. *Rebel Cities*. London: Verso.
- Kinsley, Samuel. 2014. "Memory Programmes: The Industrial Retention of Collective Life," *Cultural Geographies* 22, no. 1: 155–175. doi:[10.1177/1474474014555658](https://doi.org/10.1177/1474474014555658)
- Lefebvre, Henri. 2001. *L'existentialisme*. Paris: Anthropos.
- Lefebvre, Henri. 2014. *The Urban Revolution*. Minneapolis: University of Minnesota Press.
- Lefebvre, Henri. 2014. "Dissolving City, Planetary Metamorphosis," *Environment and Planning D: Society And Space* 32, no. 2, 203–205. doi:[10.1068/d3202tra](https://doi.org/10.1068/d3202tra)
- Lefebvre, Henri. 2016. *The Production of Space*. Malden, MA: Blackwell.
- Lefebvre, Henri, Eleonore Kofman, and Elizabeth Lebas. 2008. *Writings On Cities*. Oxford: Blackwell.
- Marcuse, Peter. 2009. "From Critical Urban Theory to the Right to the City." *City* 13, no. 2–3: 185–197. doi:[10.1080/13604810902982177](https://doi.org/10.1080/13604810902982177)
- Marx, Karl. 1967. *Writings of the Young Marx on Philosophy and Society*, edited by Lloyd D. Easton and Kurt H. Guddat. New York: Doubleday.
- Schivelbusch, Wolfgang 2014. *The Railway Journey: Trains and Travel in the Nineteenth Century*. California: University of California Press.
- Schmid, Christian. 2008. "Henri Lefebvre's Theory of the Production of Space." In *Space, Difference, Everyday Life: Reading Henri Lefebvre*, edited by Kanishka Goonewardena, Stefan Kipfer, Richard Milgram and Christian Schmid, 27–45. New York: Routledge.
- Stiegler, Bernard. 1998. *Technics and Time: 1. The Fault of Epimetheus*. Translated by Richard Beardsworth and George Collins. Stanford: Stanford University Press.
- Stiegler, Bernard. 2009. *Technics and Time: 2. Disorientation*. Translated by Stephen

- Barker. Stanford: Stanford University Press.
- Stiegler, Bernard. 2011. *Technics and Time: 3. Cinematic Time and the Question of Malaise*. Translated by Stephen Barker. Stanford: Stanford Univ. Press.
- Vial, Stephane. 2019. *Being and the Screen: How the Digital Changes Perception*. Translated by Patsy Baudoin. Massachusetts: MIT.
- Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism*. London: Profile Books.